



UNITED STATES PATENT AND TRADEMARK OFFICE

RM

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,161	10/16/2001	Taizou Tanaka	NEC N01293	7172

7590 05/04/2004
Norman P. Soloway
HAYES, SOLOWAY, HENNESSEY, GROSSMAN & HAGE, P.C.
175 Canal Street
Manchester, NH 03101

EXAMINER

GUHARAY, KARABI

ART UNIT PAPER NUMBER

2879

DATE MAILED: 05/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

um

Office Action Summary

Application No.

09/981,161

Applicant(s)

TANAKA, TAIZOU

Examiner

Karabi Guharay

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE, filed on 18 March, 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3 and 5-14 is/are pending in the application.
- 4a) Of the above claim(s) 7-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 18 March, 2004 has been entered.

Claims 1, and 4 are cancelled. Claims 7-14 are withdrawn from consideration.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, & 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 6534202), in view of Wolk et al. (US 6194119).

Regarding claim 1, Sato et al. disclose an organic electroluminescent device (Fig 1) comprising an anode (2) an organic layer containing at least one organic light emitting layer (3, of Fig 1, or 3b, & 3c of Fig 2), a cathode (4), a cap (protective layer 5 of Fig 4) to encapsulate the device main components which are stacked on an insulating substrate (1, lines 22-32 of column 5), wherein the cathode (4) has a first metallic cathode and oxygen that is contained in an interface between the organic layer and the first cathode (lines 49-62 of column 3, & lines 18-41 of column 10).

Art Unit: 2879

However, Sato et al. are silent about a second cathode layer.

However, Wolk et al., in the same field of organic EL device, teaches that cathode can include multiple layers, such as bi-layer cathode (lines 48-59 of column 15), and further teaches that the addition of another cathode layer make the metal layer more resistant to fracture and acts as a diffusion barrier against corrosive substances (lines 3-6 of column 16).

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to include a second conductive layer, as taught by Wolk et al., in the device of Sato et al. in order to have cathode having more resistant to fracture and provide more protection to the device.

Regarding claim 3, see rejection of claim 2, and the combined structure of Sato and Wolk et al. teach plurality of layers of cathode and an oxygen content in a first metallic cathode in contact with the organic layer is larger than that in any cathode formed on a second cathode and afterward being not in contact with the organic layer.

Regarding claims 5 & 6, Sato et al. disclose that the film thickness of the cathode is 20nm to 100 nm (lines 5-6 of column 6, and line 11 of column 18).

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure : Hung et al. (US 5776622); Wolk et al. (US 6291116).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (571) 272-2452. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

Art Unit: 2879

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karabi Guharay
Karabi Guharay
Patent Examiner
Art Unit 2879


VIP PATEL
PRIMARY EXAMINER